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Remarks

Claims 1-14 are pending, with claims 1, 5, and 9-11 being in independent form. The voluntary amendments to claims 10, 11 and 14 should be entered since they do not raise new issues, as discussed below.

Claims 10 and 11 have been amended to include the conjunction "and," which is inherent but was inadvertently omitted. The scopes of these claims has not changed as a result. Moreover, since claim 11 has already been indicated as allowable and the amendments are voluntary, these claims have not been amended for reasons related to the statutory requirements for a patent but simply to expedite prosecution of this application. Accordingly, the amendment of these claims does not raise any presumptions regarding, nor trigger the application of the doctrine of prosecution history estoppel to limit the range of equivalents.

Claim 14 was amended to eliminate redundancy of terminology with claim 10, from which it depends. The scope of claim 14 has not changed as a result.

Applicants acknowledge with appreciation the indication of allowability of claims 5 and 11.

As a preliminary matter, the Examiner has still not returned an initialed copy of form PTO-1449, which was submitted by the Applicant on April 8, 2003, as part of the Fourth Information Disclosure Statement. **The Examiner is again, as in previous communications, respectfully requested to return an Examiner-initialed copy of this form to the undersigned.** The Examiner's cooperation in moving past this issue is respectfully requested.

In the Office Action, claims 1, 4, 6, 7, 8, and 12 stand rejected for obviousness over U.S. Patent No. 6,678,252 to Cansever, claims 9, 10, 13, and 14 over Cansever in view of U.S. Patent No. 5,848,266 to Scheurich, and claims 2 and 3 over Cansever in view of U.S. Patent No. 6,122,291 to Robinson et al. ("Robinson"). Each of these rejections is respectfully traversed.

To establish a prima facie case of obviousness, the cited documents must teach or suggest all of the claim limitations and there must have been a reasonable expectation that the cited documents could have been successfully combined. The rejections cannot stand at least because no combination of the cited documents teaches all of the claim limitations, as discussed below. Moreover, there would have

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been no reasonable expectation that the cited documents could have been successfully combined to yield a working system, which even then would have had to be further modified to obtain the claimed subject matter. Motivations to combine the cited documents would also be absent, but it should be sufficient to point out the absent limitations and the lack of a reasonable expectation of success.

Applicant's invention relates to ad-hoc communication networks, such as Bluetooth networks, in which terminals or network nodes may belong to several sub-networks or piconets. Claim 1, for example, provides a method of modifying the allocation of a terminal's capacity between two or more networks by receiving, in a first terminal communicating in a first ad-hoc network, a request from a second terminal to modify the first terminal's capacity allocation to communicate in a second ad-hoc network with at least the second terminal, determining whether the first terminal has sufficient available capacity to accommodate the request; and if the available capacity is sufficient, then comparing the capacity allocation of the first terminal to the capacity allocation of the second terminal to determine mutually acceptable capacity blocks allocable to satisfy the request.

The Examiner contends that "receiving, in a first terminal communicating in a first ad-hoc network, a request from a second terminal to modify the first terminal's capacity allocation to communicate in a second ad-hoc network with at least the second terminal," as defined by claim 1, is disclosed in Cansever's Figures 1 and 2 and the accompanying descriptions. Applicant disagrees.

Figure 1 of Cansever relates generally to the routing of packets between nodes of a mobile ad-hoc network ("MANET") that are out of range of each other. The circles 102 and 104 refer only to wireless transmission range, not separate networks as the Examiner contends. Cansever refers only to a single MANET, i.e., network, when describing the figure. Cansever states, at col. 1, ll. 42-50:

FIG. 1 is a diagram of a conventional MANET. For example, a node C is not within a **wireless transmission range 102** of a node A, and node A is not within a **wireless transmission range 104** of node C. If node A and C want to exchange data packets, they may use node B as a transit node to forward data packets from node A to node C, and vice versa. It is practical to use transit node B because it is within both the wireless transmission ranges 102, 104 of node A and node C.

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One of ordinary skill in this art can only arrive at the Examiner's conclusion by ignoring the description provided by Cansever. Cansever clearly describes only one MANET, "a MANET," in the passage and the circles 102, 104 refer only to the transmission ranges, i.e., "wireless transmission range," of the nodes. It is much too far a leap to infer two separate networks are disclosed or even suggested.

There are many examples of a network, i.e., a single common network, in which not all nodes of the network are "within range" of the others. For example, suppose that Node B of Cansever's Figure 1 were a base station in a cellular system communicating with two nodes, Node A and Node C, that are mobile terminals in the same cell, but at opposite ends of the cell. The terminals, Node A and Node C, could be out of range of each other but both within range of Node B, the base station. In addition, the terminals could communicate with each other via the base station. Still, no one would suggest that the Nodes A, B, and C were not part of the same network, let alone make up two different networks.

Accordingly, Cansever's Figure 1 clearly does not disclose or even suggest "a first terminal communicating in a first ad-hoc network . . . to communicate in a second ad-hoc network with at least the second terminal," as defined in claim 1. There are not two networks disclosed in Figure 1.

Regarding Figure 2 of Cansever, once again, Cansever describes the figure as a single MANET. Cansever describes, "FIG. 2 is a diagram of a MANET 200, consistent with this invention," at col. 4, ll. 39-40. What's more, the reference numeral 200 clearly denotes the entire figure, meaning that all nodes in the figure are part of the same MANET, i.e., the same network, and clearly not two separate networks.

Moreover, the only reasonable interpretation of circles 202 and 204 are transmission ranges (corresponding to 102 and 104). A search reveals that transmission range circle 204 and node k=1 of Figure 2 are both not mentioned at all in the specification text.

Accordingly, Cansever's Figure 2 also clearly does not disclose or even suggest "a first terminal communicating in a first ad-hoc network . . . to communicate in a second ad-hoc network with at least the second terminal," as defined in claim 1. Therefore, nowhere in Cansever are two networks disclosed or even suggested.

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Moreover, Cansever does not disclose or suggest "receiving, in a first terminal communicating in a first ad-hoc network, a request from a second terminal to modify the first terminal's **capacity allocation to communicate in a second ad-hoc network** with at least the second terminal." As discussed above, there are not two terminals belonging to two networks in Cansever, so no request regarding capacity allocation to communicate in a second ad-hoc network is ever sent.

In addition, the contention that such a request would be obvious ignores the fact that, if Cansever even remotely suggested two networks, then there would be a slew of unanswered questions in Cansever regarding the scheduling and synchronization between the two networks, which tends to prove that Cansever is only considering bandwidth requirements between nodes of the same network.

Furthermore, in col. 9 ll. 21-24, Cansever discloses that all nodes that participate in the protocol are within transmission range of each other.

Still further, Cansever describes, at col. 7, ll. 4-12:

Node i may then allocate air time among itself and nodes j=1-4 in neighborhood 202 (step 310). Nodes j=1-4 in neighborhood 202 perform similar calculations and allocate air time similarly. Node i then determines the order of utilization among itself and neighborhood nodes j=1-4 (step 312). Again, nodes j=1-4 in neighborhood 202 perform similar calculations and determine similar order of utilization. At this point, node i, and nodes j=1-4 in neighborhood 202 transmit data at the appropriate time.

It is clear that air time is allocated only between those nodes within transmission range (within the neighborhood 202). Even following the Examiner's contentions of two networks, all of the air time would still be within the same network. (Nevertheless, it is clear from the above discussion that only one network is disclosed in Cansever). It therefore follows that Cansever does not disclose or suggest "comparing the capacity allocation of the first terminal to the capacity allocation of the second terminal to determine mutually acceptable capacity blocks allocable to satisfy the request" coupled with "modify the first terminal's capacity allocation to communicate in a second ad-hoc network" in the context of claim 1. There are no "mutually acceptable capacity blocks" negotiated between two ad-hoc networks disclosed or suggested in Cansever is disclosing.

Neither Scheurich, nor Robinson, cures the above deficiencies.

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Accordingly, since the combination of Cansever and Scheurich or Robinson fails to disclose or suggest all of the claim limitations for at least the above reasons, the obviousness rejections of claims 1-4, 6-8, and 12 should be withdrawn. Moreover, the obviousness rejections of claims 9, 10, 13, and 14 should be withdrawn for at least the same reasons.

Moreover, if one had attempted to combine the disclosures of the cited documents, one would have been more likely to arrive at something that did not work at all or not in the manner claimed by the present application. As discussed above, one of ordinary skill in the art would have known that the features of Cansever and Scheurich or Robinson cannot be combined without further modification to reach the subject matter defined by the claims. None of the documents discloses capacity allocation involving two ad-hoc networks. In the absence of any suggestion in the cited documents of how to make such a combination operable, one would have faced a serious engineering problem that naturally would have had a low probability of success without substantial experimentation and effort, especially in view of the need to modify the teachings of the documents. It is well settled that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make that modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 23 U.S.P.Q.2d 1780, 1783-84 (Fed. Cir. 1992).

Accordingly, Applicant asserts that the combination of documents relied upon to support the obviousness rejection of the claims is improper, and respectfully requests the claim rejections be reconsidered and withdrawn for this reason also.

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For the foregoing reasons, Applicant believes entry of this Amendment would put the application in condition for allowance. Thus, it is respectfully requested that this Amendment be entered, and a Notice to this effect be provided. If any questions remain, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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I hereby certify that this correspondence is being sent by facsimile transmission to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 to the following facsimile number:

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